

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent application

Inventor(s)

for

Title of invention

the specification of which is being transmitted herewith

OR

In re application of: HILL, Raymond G.

Application No.: 10 / 617,373 Group No.: 3746

Filed: July 11, 2003 Examiner:

For: INJECTION SPRAYING SYSTEM

Assistant Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

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(Information Disclosure Statement [6-1]—page 1 of ____)

NOTE: "An information disclosure statement shall be considered by the Office if filed by the applicant:

- (1) Within three months of the filing date of a national application;
- (2) Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or
- (3) Before the mailing date of a first Office action on the merits, whichever event occurs last." 37 C.F.R. § 1.97(b).

NOTE: "Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section." 37 C.F.R. § 1.56(a).

"Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) each inventor named in the application;
- (2) each attorney or agent who prepares or prosecutes the application; and
- (3) every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application." 37 C.F.R. § 1.56(c).

NOTE: The "duty as described in § 1.56 will be met so long as the information in question was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98 before issuance of the patent." Notice of January 9, 1992, 1135 O.G. 13-25 at 17.

WARNING: "No information disclosure statement may be filed in a provisional application." 37 C.F.R. § 1.51(b).

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

(check sections forming a part of this statement: discard unused sections and number pages consecutively)

1. Preliminary Statements
2. FORMS PTO/SB/08A and 08B (formerly FORM PTO-1449)
3. Statement as to Information Not Found in Patents or Publications
4. Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
5. Cumulative Patents or Publications
6. Copies of Listed Information Items Accompanying This Statement
7. Concise Explanation of Non-English Language Listed Information Items
 - 7A. EPO Search Report
 - 7B. English Language Version of EPO Search Report
8. Translation(s) of Non-English Language Documents
9. Concise Explanation of English Language Listed Information Items (Optional)
10. Identification of Person(s) Making This Information Disclosure Statement

(complete the following, if appropriate)

Sections

, respectively, have been continued on ADDED PAGE(S).

NOTE: "Once the minimum requirements are met, the examiner has an obligation to consider the information." Notice of April 20, 1992 (1138 O.G. 37-41, 37).

Section 1. Preliminary statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Section 6. Copies of Listed Information Items Accompanying This Statement

NOTE: 37 C.F.R. 1.98(a)(2) requires that any information disclosure statement filed under § 1.97 shall include: "A legible copy of: (1) Each U.S. and foreign patent; (2) Each publication or that portion which caused it to be listed; and (3) All other information or that portion which caused it to be listed, except that no copy of a U.S. patent application need be included"

NOTE: The wording in § 1.98(a)(2)(iii) makes it clear that the requirement to submit a copy of each item of information listed in an information disclosure statement does not apply to the citation of a U.S. patent application. Notice of January 9, 1992, 1135 O.G. 13-25, at 14.

Legible copies of all items listed in Forms PTO/SB/08A and 08B (formerly Form PTO-1449) accompany this information statement.

(complete the following, if applicable)

Exception(s) to above:

- Items in prior application, from which an earlier filing date is claimed for this application, as identified in Section 4.
- Cumulative patents or publications identified in Section 5.

**Section . Concise Explanation of English Language Listed Information
Items (OPTIONAL)**

NOTE: "Applicants may, if they wish, provide a concise explanation of why English-language information is being submitted and how it is understood to be relevant. Concise explanations are helpful to the Office, particularly where documents are lengthy and complex and applicant is aware of a section that is highly relevant to patentability or where a large number of documents are submitted and applicant is aware that one or more are highly relevant to patentability." Notice of April 20, 1992 (1138 O.G. 37-41, 38).

U.S. Patent No. 6,314,979, issued on November 13, 2001 to Lips, teaches a mixing and spraying system utilizing a premixing "globe" for the various components before dispensing. In one embodiment, the invention includes a programmable controller and an injection assembly comprising at least one solenoid valve and an injector. The controller senses which of a plurality of watering zones is currently being watered, and effects the transmission of electrical pulses to the solenoid valve. Such pulses cause the valve to open/close and thereby produce stroking of a spring-loaded piston within the injector.

U.S. Patent No. 6,164,924, issued on December 26, 2000, to Gruett et al, teaches a piston and drive for metering a pump with a visual indicator as to the volume being dispensed. The drive assembly includes a rotatable drive shaft, an eccentric cam insert, a cam rod and a rocking beam. The rocking beam is coupled to the piston, the cam rod shaft and a biasing mechanism. When the drive shaft is rotated, movement of the cam rod shaft causes the rocking beam to pivot and move the piston along a stroke to dispense the liquid.

U.S. Patent No. 5,366,159, issued on November 22, 1994 to Childers, describes an automatic fertilizing apparatus which injects fertilizer directly into the waterstream of a sprinkler system. Each time the sprinkler system is activated, a predetermined amount of fertilizer is dispensed into the waterstream. The apparatus can be controlled to dispense fertilizer only through sprinkler lines as determined by the user.

U.S. Patent No. 5,314,120, issued on May 24, 1994 to Nau et al, discloses a mixing and spraying system having a tank for carrier fluid, such as water, and a feed pump that pumps carrier fluid from this tank through a pipe to which spray nozzles are connected, and having a metering pump that is connected by a connecting pipe to a preparation container and is driven by the carrier fluid supplied by the feed pump.

U.S. Patent No. 4,832,499, issued on May 23, 1989 to Fiorentini, teaches an apparatus for feeding and metering fluid components to a mixing head, in particular for metering and feeding reactive chemical components to a high pressure mixing head. The apparatus comprises at least a first and second transfer cylinder whose control unit is fed with hydraulic fluid from a single source

of constant pressure, and whose component pumping unit is connected to a tank for the component, respectively to an inlet aperture for the component in a chamber of the mixing head, by means of a proportional servo valve which is controlled in relation to the rate of flow of the components so as to keep both the pressure and the flow of the components to be mixed constant.

U.S. Patent No. 4,638,924, issued on January 27, 1987 to Newsom, describes a mixing and spraying system that has a premixing "globe" for the various components before dispensing. The amount of concentrate dispensed is selected by varying the pump set stroke. A meter measures the flow of water to the mix tank. A high pressure pump pressurizes mixture from the mix tank, which is discharged through a spray gun, or recycled in part to the mix tank to agitate the mixture therein.

U.S. Patent No. 4,390,035, issued on June 28, 1983 to the present inventor, also teaches a water-type spray application system employing a hydraulically-operated motor which is operated by the source of supply of the water or base carrier liquid and where the hydraulic motor dependently controls the amount of chemicals injected into the water system for application to lawns. The dependent chemical applications may be independently monitored as to the relationship of injection to the flow of water.

U.S. Patent No. 4,096,059, issued on June 20, 1978 to Pinkerton, discloses an apparatus for accurately proportioning and mixing fluids comprising a double acting piston/cylinder unit of which the cylinder is divided into two chambers by the piston and the volume of the cylinder swept by the piston at one end of the piston is lesser than that at the other end. An inlet connection for a first fluid is made to one chamber, a conduit connects the two chambers and includes a connection to a source of the second fluid.

U.S. Patent No. 3,894,690, issued on July 15, 1975 to the present inventor, discloses a horticulture system that mixes and meters two liquids in precise and determinable quantities and provides appropriate control of the liquid flow. A water tank and a chemical tank are respectively coupled by constant volume pumping means to a mixing and discharge nozzle means. Bell means are provided to respond to the presence of flowing chemicals in the chemical output line to indicate that a metered volume or flow of chemicals is occurring and to provide an indication of the relative flow volume. The bypass valve includes an improved pressure responsive system which is adjustable for differing line pressure conditions.

Section 1 . Identification of Person(s) Making This Information Disclosure Statement

The person making this statement is

(check each applicable item)

(a) the inventor(s) who signs below

SIGNATURE OF INVENTOR

(type name of inventor who is signing)

(b) an individual associated with the filing and prosecution of this application (37 C.F.R. § 1.56(c))

SIGNATURE OF INVENTOR

(type name of inventor who is signing)

(c) the practitioner who signs below on the basis of the information:

(check each applicable item)

supplied by the inventor(s).
 supplied by an individual associated with the filing and prosecution of this application. (37 C.F.R. § 1.56(c))
 in the practitioner's file.

SIGNATURE OF PRACTITIONER

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(type or print name of practitioner)

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PTO/SB/08A (10-96)

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<p>Substitute for form 1449A/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p><i>(use as many sheets as necessary)</i></p>				<p>Cmpl t if Known</p> <table border="1"> <tr> <td>Application Number</td> <td>10/617,373</td> </tr> <tr> <td>Filing Date</td> <td>July 11, 2003</td> </tr> <tr> <td>First Named Inventor</td> <td>HILL, Raymond G.</td> </tr> <tr> <td>Group Art Unit</td> <td>3746</td> </tr> <tr> <td>Examiner Name</td> <td></td> </tr> <tr> <td>Attorney Docket Number</td> <td>1889-1</td> </tr> </table>	Application Number	10/617,373	Filing Date	July 11, 2003	First Named Inventor	HILL, Raymond G.	Group Art Unit	3746	Examiner Name		Attorney Docket Number	1889-1
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U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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